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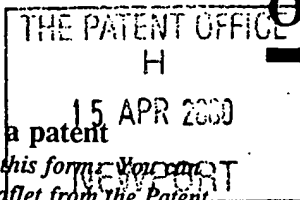
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17APR00 E529820-2 D02879
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THE NETHERLANDS

Patents ADP Number (if you know it)

If the applicant is a corporate body, give the country/state of its incorporation

THE NETHERLANDS

7419294001

4. Title of the invention

COMMUNICATIONS SYSTEM

5. Name of your agent (if you have one)

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7133473002

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DESCRIPTION

COMMUNICATIONS SYSTEM

5 The present invention relates to methods and apparatuses for delivering data to a user and, in particular, to systems where such data is selected from a larger store automatically and on the basis of a compiled profile of the user.

 An example of such a system is described in European patent
10 application EP-A-0 944 002 which provides a communications method and a communications network comprising a server and a plurality of user terminals. The user terminals can share information with each other and with the server by means of an interconnecting network, especially the Internet. On the server, a profile database is provided containing data representing a
15 characteristic behaviour of associated user addresses. The server automatically acquires this representative data in response to activities performed by the associated users of the network, which data is stored with the associated user addresses in the profile database on the server.

 The particular concern with the system of EP-A-0 944 002 is to avoid an
20 incorrect or inappropriate profile specification being built up for a user and, to this end, the described profile database can be accessed by the user at any time such that the user can modify the content of the database in relation to the contents associated with one of the addresses associated with that user. The user can modify the contents by, for example, adding, deleting, or
25 amending subject matter in the profile database.

 Whilst user profiling can increase the user-friendliness of the system as perceived by the user, the accommodations required in terms of additional data channels to storage and data collation utilities within the server may make the provision of user-profiling or user tailoring of services an unjustified excess.

It is accordingly an object of the present invention to provide some means whereby the user-perceived enhanced system functionality arising from user profiling does not require excessive system communications resources.

According to a first aspect of the present invention, there is provided a
5 networked communications apparatus comprising at least one server and a plurality of user stations, wherein the user stations comprise terminals arranged to receive information from the at least one server by means of a connection via a first network, the apparatus further comprising:

storage means holding a profile database, which profile database
10 contains data representing a characteristic behaviour of an associated user terminal network address or addresses, the apparatus including means for automatically acquiring such data in response to an activity of the associated user and storing the same together with the associated user terminal network address or addresses in the profile database;

15 characterised in that the user station further comprises a portable communications device coupled with said terminal and connectable to said at least one server via a second network, wherein the user terminal is configured to perform the automatic acquisition of data for the profile database, said data being transferred to said server via said portable communications device
20 following establishment of a connection via said second network. By use of the portable communications device link for the transfer of user profiling data, traffic on the first network (which may be the Internet or some more localised Intranet) is kept to within manageable levels such that the user does not associate advanced profiling functionality with system delays.

25 The portable communications device may suitably comprise a mobile telephone (the second network being a telecommunications network), and the said access data for establishing a connection may therefore comprise a telephone number. The above-referenced first network may be the Internet and the user terminals may accordingly comprise at least a display device
30 coupled with processing means hosting an Internet browser and user-operable means for control of the same. With such an arrangement, one or more of the

said terminals may comprise a television receiver further configured to access and display data from the World Wide Web.

In one embodiment, the coupling between the portable communications device and the respective user terminal may comprise a wireless link. Additionally, the aforementioned data transfer via said wireless link preferably follows a predetermined set of message transfer protocols, such as those known generically as "Bluetooth".

The portable communications device may further comprise a buffer arranged to store data received from said server and addressed to the respective user terminal and, in such circumstances, may further comprise means for reading stored data from said buffer and sending said data on to the user terminal. In such an arrangement, the portable communications device may further comprise means configured to determine whether a respective user terminal is available to receive data from the said server and, if so, to forward such data and, if not, to buffer such data until such time as either the respective user terminal becomes available or the buffer becomes full.

In an arrangement as aforesaid, said portable communications device may further comprise means configured to determine whether said server is available to receive data from a respective user terminal and, if so, to forward such data and, if not, to buffer such data until such time as either the server becomes available or the buffer becomes full.

The user terminal may be configured for the automatic acquisition of data for the profile database, with said data being transferred to said server via said mobile communications device following establishment of a connection via said second network. Additionally, the coupling with said user terminal may be by wireless transmission therefrom, and the portable communications device means for receiving wireless transmissions from the terminal may be further configured to receive additional data transmitted wirelessly from other sources.

Also in accordance with the present invention, there is provided a portable communications apparatus for use in a system as described hereinabove, a data processing apparatus having the technical features of a

user terminal as recited above and including means for coupling, for transfer of data, with a communications described above.

According to a further aspect of the present invention, there is provided a method of data communication for use in a networked communications system comprising at least one server and a plurality of user stations, wherein the user stations comprise terminals which can receive information from the at least one server by means of a connection via a first network, the method comprising:

providing a profile database, which profile database contains data representing a characteristic behaviour of an associated user terminal network address or addresses, the data being acquired automatically in response to an activity of the associated user and being stored together with the associated user terminal network address or addresses in the profile database;

characterised in that, the user station further comprising a portable communications device coupled with said terminal and connectable to said at least one server via a second network, the user terminal performs the automatic acquisition of data for the profile database, said data being transferred to said server via said portable communications device following establishment of a connection via said second network.

The said communications device may comprise a mobile telephone and the server may store access data for establishing connection in the form of a simple telephone number for said mobile telephone. Under such circumstances, the portable communications device may be configured to store data received from said server and addressed to the respective user terminal, and the buffer may hold or buffer such data until such time as either the respective user terminal becomes available or the buffer becomes full.

Further features and advantages of the present invention will become apparent from reading of the following description of preferred embodiments, given by way of example only, and with reference to the accompanying drawings, in which:

Figure 1 represents a coupled arrangement of user terminal and portable communications device;

Figure 2 represents an exemplary implementation of messaging beacon infrastructure;

5 Figure 3 represents a message format for transmission in a beacon slot in the arrangement of Figure 2;

Figure 4 shows the transmission of messaging slots from a beacon; and

Figure 5 represents a combined user terminal and portable communications device and its connection to different services.

10

Figure 1 schematically represents components embodying the present invention and in the form of a networked communications apparatus comprising at least one server or service provider 10 coupled to and a plurality of user stations 12 (only one of which is shown) via a link 14 which may
15 comprise a network connection, cable link, or other data transfer means. The server 10 includes at least one storage means 16 holding a profile database, which profile database contains data representing a characteristic behaviour of an associated user as identified by their terminal network address or addresses. The server builds up the user profile data by automatically
20 acquiring such data in response to one or several selected activities of the associated user, such as what television channels they watch, what goods they purchase on-line and so forth. This profiling data is then stored together with the associated user terminal network address or addresses in the profile database.

25 The user station further comprises a portable communications device 18, suitably a mobile telephone, coupled with said terminal 12 as indicated by dashed link 20 and connectable to said at least one server or service provider 22 via a second network or data link 24, in this case a telecommunications network. As shown by line 26, the means for automatically acquiring user data
30 (server 10) is coupled to the telecommunications service 22 and may use this channel via link 20 as a simple low-cost route for user profiling data being gathered from or by the user terminal 12. In order to facilitate this connection,

the service provider 10 need simply store the users mobile telephone number with the profiling data for that user in the profile database 16. By use of the portable communications device link for the transfer of user profiling data, traffic on the first network or link 14 is kept to within manageable levels such that the user does not associate advanced profiling functionality with system delays.

The link 20 between the portable communications device 18 and the respective user terminal 12 may comprise a wireless (radio frequency or infra-red) link. Additionally, the aforementioned data transfer via said wireless link preferably follows a predetermined set of message transfer protocols, such as those known generically as "Bluetooth".

Figure 2 shows one possible implementation of a beacon infrastructure for use in shops, theme parks and so forth, where the beacons B1 - BN transmit additional data messages to a users portable communications device 18. The beacons provide matrix coverage over a series of locales.

Authoring of messages to be transmitted in one or more slots from one or more of the beacons is handled at terminals T1 - TM and may, for example, comprise using a simple html template from the beacon infrastructure server BIS to which the beacons are connected. Slot and frame information is transmitted over secure links, e.g. https, SSL.

Whilst it is expected that the messages will simply be broadcast to whichever mobile devices 18 are within range of a given terminal (with the user then being able to view the message data on the mobile device), response messages sent by the mobile device back to the broadcasting beacon may be supported, as indicated by dashed line 30. In one preferred embodiment, the mobile device 18 is provided with a buffer to build up a log of received messages (optionally time-stamping them on receipt) which messages can then be studied and replied to - for example if containing URL's - at the users leisure. With the buffer, the viewing and responding of messages may be handled by other devices of the user with the captured log being downloaded (e.g. via link 20) when the user is back in the vicinity of these devices.

Services may rent beacon slots from an infrastructure provider, and a typical message form, shown in Figure 3, might comprise:

id an identifier for the transmitting beacon
SS an identifier for the Service Supplier
5 Ci specification of the Service Class
SD (optionally) further service details
QoS specification of Quality of Service
pi one or more connection pointers.

10 The connection pointers may be prefixed by a pointer type (eg. SMS, 1-800-#,url) One service may have alternative pointers for the mobile to activate the service connection. Various qualities of service may be supported by the same service provider, e.g. SMS, Audio interaction, GPRS, WAP etc. These should also be matched against the users preferences, mobile platform
15 options, and cost preferences.

Each beacon emits, in pulsed mode, a frame of barcode slots offering connection "bridges" to various local services, as represented by Figure 4.

Negotiation for match between profile and appropriateness of service class before service activation with a selected quality of service, QoS, as
20 illustrated by Figure 4.

The chosen QoS should fit the user's context, and acceptable charging rate. Therefore different QoS have different priorities at different times of the user's day.

Before using pointer pi to activate the service connection (which may be
25 made over GSM cellnet, SMS, or even over the rf/ir link, bluetooth) the class ci: (and possibly further details, e.g. QoS) is compared with current subset of the user profile, SUP. SUP may be stored on the mobile (e.g. as a table), or remotely on a web site owned by the user (or provided by the beacon infrastructure provider for end users). The first stages of correlating class ci:
30 and further service details against SUP are imaged to be automatic. These may happen even before the user is notified by the mobile of the presence of a link to that service.

For example if a service of class ci: matches a table of classes held on the mobile, then either: -

- the user is alerted and may with a single key press on the mobile activate the service pointer pi, OR
- 5 • the mobile first automatically issues (e.g. via SMS) a request to remote website BS for a more exact correlation between the services details and SUP. If the service is deemed to match the user's current interest and intent, a positive answer is returned to the mobile and only then is the user alerted by the mobile of the service's presence. The user then has the
- 10 choice to activate the service automatically via its pointer pi.

Figure 5 represents a further arrangement for TV or music-linked services, with an entertainment system (TV, CD Player MP3 jukebox or games platform) being coupled via the mobile device to Cellnet or web-based

15 services.

As before, the "Frame" broadcast by r.f. or i.r. to the mobile may contain more than one service class, more than one pointer type pi per service offering different QoS and optionally more details of the services on offer.

In the extreme, a service slot might only contain the identity of the music

20 CD currently being played, plus the pointer pi (e.g. to a phone-based music service or web site) being pre-stored on the mobile. On activating the service via pi, the service is passed the identity of the CD from the beacon slot information, and the music service can be automatically tailored to the current CD.

25

Although defined principally in terms of a software-based or controlled implementation, the skilled reader will be well aware that many of the above-described functional features could equally well be implemented in hardware or a combination of software and hardware.

30 From reading the present disclosure, other modifications will be apparent to persons skilled in the art. Such modifications may involve other features which are already known in the design, manufacture and use of

telecommunications systems and/or data network access apparatus and devices and component parts thereof and which may be used instead of or in addition to features already described herein.

CLAIMS

1. A networked communications apparatus comprising at least one server and a plurality of user stations, wherein the user stations comprise terminals arranged to receive information from the at least one server by means of a connection via a first network, the apparatus further comprising:
- 5 storage means holding a profile database, which profile database contains data representing a characteristic behaviour of an associated user terminal network address or addresses, the apparatus including means for automatically acquiring such data in response to an activity of the associated user and storing the same together with the associated user terminal network address or addresses in the profile database;
- 10 characterised in that the user station further comprises a portable communications device coupled with said terminal and connectable to said at least one server via a second network, wherein the user terminal is configured to perform the automatic acquisition of data for the profile database, said data being transferred to said server via said portable communications device following establishment of a connection via said second network.
- 15
2. Apparatus as claimed in Claim 1, wherein said portable communications device comprises a mobile telephone, said second network is a telecommunications network.
- 20
3. Apparatus as claimed in Claim 1 or Claim 2, wherein the first network is the Internet and the user terminals comprise at least a display device coupled with processing means hosting an Internet browser and user-operable means for control of the same:
- 25
4. Apparatus as claimed in Claim 3, wherein one or more of said terminals comprises a television receiver further configured to access and display data from the World Wide Web.
- 30

5. Apparatus as claimed in Claim 1, wherein the coupling between the portable communications device and the respective user terminal comprises a wireless link.

5 6. Apparatus as claimed in Claim 5, wherein data transfer via said wireless link follows a predetermined set of message transfer protocols.

7. Apparatus as claimed in any of Claims 1 to 6, wherein the portable communications device further comprises a buffer arranged to store
10 data received from said server and addressed to the respective user terminal, and means for reading stored data from said buffer and sending said data on to the user terminal.

8. Apparatus as claimed in Claim 7, wherein a said portable
15 communications device further comprises means configured to determine whether a respective user terminal is available to receive data from said server and, if so, to forward such data and, if not, to buffer such data until such time as either the respective user terminal becomes available or the buffer becomes full.

20 9. Apparatus as claimed in Claim 7 or Claim 8, wherein a said portable communications device further comprises means configured to determine whether said server is available to receive data from a respective user terminal and, if so, to forward such data and, if not, to buffer such data
25 until such time as either the server becomes available or the buffer becomes full.

10. Apparatus as claimed in any of Claims 1 to 4, wherein the or each said portable communications device further comprises the technical
30 features of the respective user terminal.

11. Apparatus as claimed in any preceding Claim, wherein said user terminal is configured for the automatic acquisition of data for the profile database, said data being transferred to said server via said mobile communications device following establishment of a connection via said second network.

12. Apparatus as claimed in Claim 1, wherein the coupling with said user terminal is by wireless transmission therefrom, and the portable communications device means for receiving wireless transmissions from the terminal are further configured to receive additional data transmitted wirelessly from other sources.

13. A communications apparatus having the technical features of said portable communications device as recited in any preceding Claim.

14. Data processing apparatus having the technical features of a user terminal as recited in any preceding claim including means for coupling, for transfer of data, with a communications apparatus as claimed in Claim 13.

15. A method of data communication for use in a networked communications system comprising at least one server and a plurality of user stations, wherein the user stations comprise terminals which can receive information from the at least one server by means of a connection via a first network, the method comprising:

providing a profile database, which profile database contains data representing a characteristic behaviour of an associated user terminal network address or addresses, the data being acquired automatically in response to an activity of the associated user and being stored together with the associated user terminal network address or addresses in the profile database;

characterised in that, the user station further comprising a portable communications device coupled with said terminal and connectable to said at least one server via a second network, the user terminal performs the

automatic acquisition of data for the profile database, said data being transferred to said server via said portable communications device following establishment of a connection via said second network.

5 16. A method as claimed in Claim 15, wherein said portable communications device comprises a mobile telephone and stored access data for establishing connection comprises a telephone number for said mobile telephone.

10 17. A method as claimed in Claim 15 or Claim 16, wherein said portable communications device is configured to store data received from said server and addressed to the respective user terminal, and to buffer such data until such time as either the respective user terminal becomes available or the buffer becomes full.

15 18. A method as claimed in Claim 15 or Claim 16, wherein said portable communications device is configured to store data received from a one of said user terminals and addressed to the said server, and to buffer such data until such time as either the said server becomes available or the buffer
20 becomes full.

 19. A networked communications apparatus comprising at least one server and a plurality of user stations, wherein the user stations comprise terminals arranged to receive information from the at least one server by
25 means of a connection via a first network, substantially as hereinbefore described with reference to the accompanying drawings.

 20. A portable communications device for use in a networked communications apparatus comprising at least one server and a plurality of
30 user stations, wherein the user stations comprise terminals arranged to receive information from the at least one server by means of a connection via a first

network, substantially as hereinbefore described with reference to the accompanying drawings.

21. A user station for use within a networked communications apparatus comprising at least one server and a plurality of said user stations, wherein the user stations comprise terminals arranged to receive information from the at least one server by means of a connection via a first network, substantially as hereinbefore described with reference to the accompanying drawings.

22. A method of data communication for use in a networked communications system comprising at least one server and a plurality of user stations, substantially as hereinbefore described and with reference to the accompanying drawings.

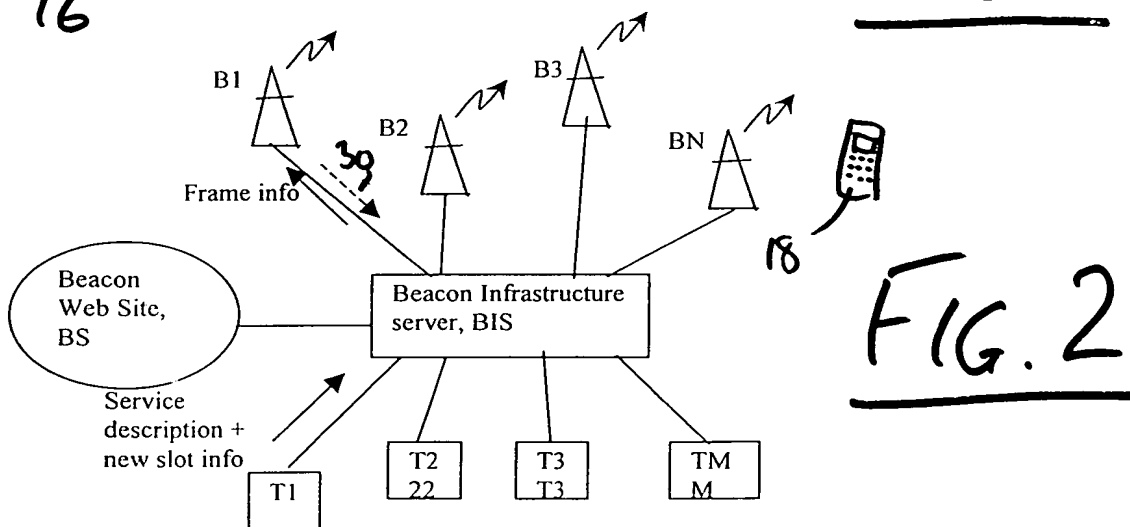
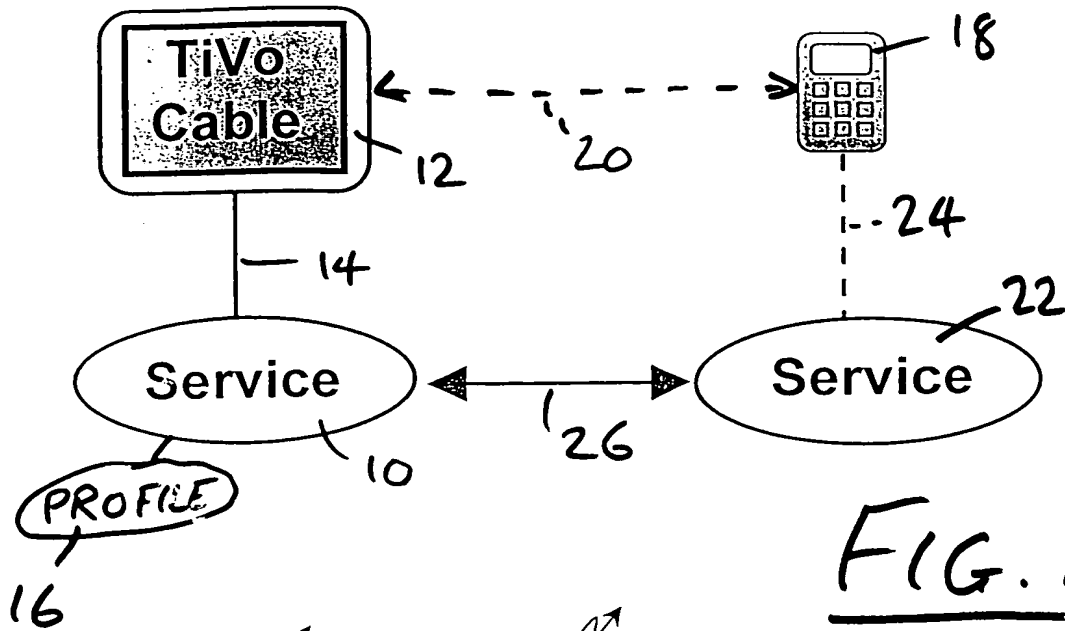
ABSTRACT

COMMUNICATIONS SYSTEM

5 In a networked communications apparatus comprising at least one
server and a plurality of user stations, wherein the user stations comprise
terminals arranged to receive information from the at least one server by
means of a connection via a first network, the user station further comprises a
portable communications device coupled with said terminal and connectable to
10 said at least one server via a second network. The user terminal is configured
to perform the automatic acquisition of data for the profile database, said data
being transferred to said server via said portable communications device
following establishment of a connection via said second network.

15 (Fig. 1)

1/2

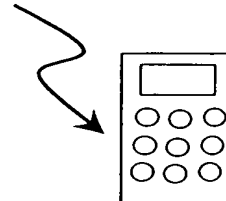
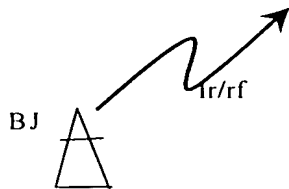


id	SS	Ci	SD	QoS	pi
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FIG. 3

2 / 2

Service Slot 1
Service Slot 2
Service Slot 3



Mobile, MK

FIG. 4

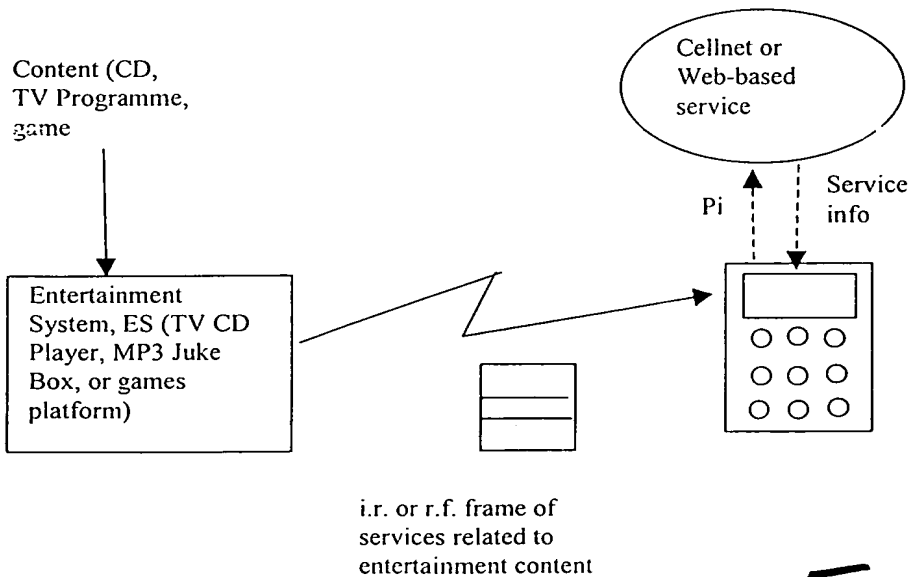


FIG. 5